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UNIVERSITY OF QUEENSLAND

Prentice Computer Centre

NEWSLETTER

authorization: Director of the Centre

1      EXTENSION OF CAPACITY

As users are aware, the growth in demand for computing over the past two years has placed severe strain on our resources. It was planned to make a major enhancement early in the 1976-78 triennium, but as a result of general conditions of economic stringency, this will at best be delayed. As an interim measure, approval has been given to purchase a modest amount of computing equipment to allow the extension of job slots and some extension of capacity. Given the time required for deliveries, the time at which funds will be available and equipment reorganization etc., it is doubtful whether this will be fully operational before the last quarter of 1976.

It is, therefore, necessary to examine very closely our operating overheads with a view of reducing these and making more capacity available to users. In some cases, of course, there are inefficiencies that have developed in the system that can be corrected without reducing a service now provided to users. In other cases, there is need to balance the cost of providing a facility against the value of having it. One such service to users is the present continuous backup of files immediately they are created or changed. The cost in terms of charges for resources to carry out this function is in the order of \$60,000 per annum. It is a job too that has greatest activity during periods of heavy load and requires the use of a dedicated disk drive. Although we could probably improve the efficiency of this program, it is doubtful if such course is justified based on the use of this facility by users.

It is proposed, therefore, that the level of backup to the public area will be reduced from a continuous backup to an overnight backup. Thus, if you inadvertently delete a file on one day, we can only recover to the version of the previous day. If for some reason a complete structure or the whole online area is lost, then our recovery will be to the system as it existed at the end of processing on the previous day.

Our investigations have shown that the recovery from files on the continuous backup system is rare. The general advantages of providing another disk drive to the system, another job slot and reduction of swapping overheads by far outweigh the value of this level of insurance on file recoveries.

## 2 EXPIRY DATES ON PPNS

Another area where overheads can be reduced is the cancellation of dormant PPNs and their associated files. Naturally, there is a high turnover of users with a University system and often PPNs are held and indeed file storage paid for by Departments, although no use has been made of them. To help Departments and the Centre to control this area, it is intended to issue an expiry date with all PPNs provided. As the expiry date of a PPN approaches, a warning will be given to a user. Unless the PPN is renewed before the expiry date, it will be cancelled and all associated files deleted. Existing PPNs will be given an expiry date of 24 December.

## 3 MANAGEMENT OF THE ONLINE AREA

During 1975, users and the Centre were plagued and overheads were increased by the need to purge frequently the online area to provide sufficient space at particular periods of the year. Almost half the PPNs on the system are in the student class and the need to purge was closely related to the build up of student activity on the system. That is, that one class of user has unduly influenced the service to other classes of user (not because the system was not used correctly by the student group but because the global system of management did not make distinction for different types of use). For this reason, as a trial in first semester, we intend to introduce a new facility of 'Limited Life Storage'(LLS) to assist the management of the online directory. It is aimed at users who do not have a requirement for long term storage of files. PPNs in the LLS class will have files which have not been accessed in a period of 21 days\* deleted from the system. They will not have the file migration system available to them or be subject to purges from the system.

All PPNs in the "student" class will be registered within this category. It should be noted, however, that supervisor PPNs will remain in the normal classification. We hope all supervisors will co-operate in this trial. We feel that this system plus the expiry date on PPNs will be of appreciable help to supervisors in managing student PPNs and their use of storage. If though you feel that there are some special circumstances, please discuss the matter with Geoff Prudames our Operations Manager (extension 6168). The system is, of course, available to users other than the student group.

\* This period will be lengthened in the break between semester 1 and 2 to allow continuity.

We hope that the trial will establish that the following advantages will flow from the new system:- The offline file area will be reduced considerably as files from the LLS PPNS will no longer be purged. This together with the reduction of queues at purge time will improve the response and costs of FMS. The time between FMS purges of the normal online area will be increased. Control by student supervisors will be facilitated.

Before the end of the trial period, our aim would be to discuss the extensions and modifications of the system with users.

#### 4      FILE MIGRATION SYSTEM

This brings one to the matter of the File Migration System. It can be appreciated that there are definite technical limits to the amount of online disk storage which can be placed on the system. Funding can also be an inhibiting factor. For this reason, we introduced the facility of a File Migration Service to allow users to migrate files not in immediate use to a lower cost offline storage and retrieve them when required but, obviously, at a lesser response than from the offline area.

Unfortunately, the dramatic growth in use of the computer over the last two years has reduced the effectiveness of our initial system. Indeed the FMS system really became a purging system for the online area to meet rapid growth and keep the system alive. The problems evident to users were purging of wanted files to the offline area, delays in retrievals, variable and sometimes high costs of FMS commands.

Certainly, we can improve the system by rewriting the program with more efficient file structures and algorithms. Our review suggests, however, that there are more deep seated problems which should be attended to before any benefit could be gained from a rewrite of programs. Earlier in the newsletter, reference was made to the clogging of the offline area with files for which there is no permanent storage requirement. Additionally, we found that our operations procedures could be improved to provide a better standard of response.

A more detailed system investigation with user consultation is required before we do anything. John Barker, our Systems Analyst (User Services) (extension 6288), would be interested to talk to users who have views on this matter.

In the meantime, we hope that some of the action we have taken already will make the system more useful. Our aim is to provide an average response of around four hours with a guarantee of overnight retrieval. Please let the Director know if you are not receiving at least overnight retrieval.

One action we have taken requires an apology. In order to reduce the offline area to reasonable proportions to allow our new procedures to operate, we have transferred files not accessed in the last seven months to magnetic tape. We are aware that for academic developments, particularly class teaching, it is probably a requirement to maintain files on the offline disk area for 12 months before transfer to magnetic tape. We wish to apologise for any inconvenience to users on this matter. Please let Geoff Prudames know (ext. 6168) if you have any difficulty in retrieving wanted files from magnetic tape.

## 5 USE OF JOB SLOTS

We have reviewed our own operational and developmental overheads with the aim of making as many job slots as possible available to users. We have introduced extended low priority rates for terminal usage - 70% rather than 80% of normal rate for 6 p.m. to 7.30 p.m. and half rate has been brought forward to commence at 7.30 p.m. rather than 9 p.m. We hope users will take advantage of these low rates to conserve their limited funds and spread demands on the system.

Over time we all probably develop practices which on review could be improved. For example, it may reduce occupancy time if we ensure that we plan a terminal session in advance. We are in a position of scarce resources and we hope that all users will assist by using them effectively.

One matter that should be mentioned here is that sometimes users adopt strategies to "beat" the system. This acts to the disadvantage of other users and eventually could result in the Centre introducing mechanisms of control. We would rather not be placed in this position and again request the co-operation of all users on this matter.

## 6 USER SUGGESTIONS

We welcome suggestions from users on areas where our services can be improved or where overheads and other costs may be reduced. We suggest that the best method of bringing such matters to our attention is to use the standard Computer Centre 'Problem Specification' form.

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